

### AMENDMENTS TO THE CLAIMS

All claims are presented below with the respective status of each claim shown in parentheses after the claim number. Only those claims being amended herein show their changes in highlighted form, i.e., insertions appear as underlined text (e.g., insertions) while deletions appear as strikethrough text (e.g., ~~deletions~~). All previously amended claims appear as clean text.

908 B17 1 (Currently amended) A method of reorganizing a table in a database file while providing clients of the database file, ~~substantially~~ continuous access to data stored in the table, the method comprising:

- reorganizing data of an original table by copying the data to a reorganized table;
- during the copying, allowing modifications to the data of the original table while collecting records of the modifications;
- when the copying completes, applying the modifications from the collected records against the reorganized table;
- applying a first trigger lock to the original table, the first trigger lock blocking select data modification operations against the original table while allowing other operations against the original table;
- applying any remaining modifications from the collected records against the reorganized table;
- applying a second trigger lock to the reorganized table, the second trigger lock blocking select data modification operations against the reorganized table while allowing other operations against the reorganized table;
- substituting the reorganized table for the original table; and
- removing the second trigger lock, wherein additional more-restrictive locks to the original table are not needed during the method of reorganizing the original table, thereby providing clients of the original table continuous access to the data during the reorganization through at least the other operations allowed by the first trigger lock.

2. (Original) The method of Claim 1, wherein the other operations allowed by at least one of the first and second trigger locks comprises one or more structural modification operations.

3. (Original) The method of Claim 1; wherein the other operations allowed by at least one of the first and second trigger locks comprises one or more read-only operations.

4. (Original) The method of Claim 1, further comprising:  
during the application of the modifications from the collected records against the reorganized table, allowing additional modifications to the data of the original table while collecting additional records of the additional modifications;  
and

when the modifications and at least portions of the additional modifications have been applied against the reorganized table, applying the first trigger lock to the original table;

wherein the step of applying any remaining modifications includes applying any remaining modifications or additional modifications against the reorganized table.

5. (Original) The method of Claim 1, wherein when the original table included one or more relational constraints, the method further comprises applying at least one of the one or more relational constraints to the reorganized table.

6. (Original) The method of Claim 5, wherein the application of the at least one relational constraint to the reorganized table includes applying a trigger procedure to the reorganized table.

7. (Original) The method of Claim 5, wherein the application of the at least one relational constraint to the reorganized table includes applying a trigger lock to another table.

8. (Original) The method of Claim 1, wherein the original table includes a table name, and wherein the step of substituting the reorganized table for the original table further comprises renaming the original table another name and naming the reorganized table the table name.

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9. (Original) The method of Claim 1, further comprising archiving the original table.

10. (Original) The method of Claim 1, wherein the copying of the data of the original table to the reorganized table further comprises creating an original synchronization point, after which the records of modifications are collected.

11. (Original) The method of Claim 1, wherein before the application of the second trigger lock, the original table and the reorganized table are in synchronization with one another.

12. (Cancelled).

13. (Cancelled).

14. (Cancelled).

15. (Currently amended) A lock for blocking select operations against a object of a database file while allowing other operations against the object, the lock comprising:

one or more actions which block the execution of select data modification operations against an object by returning an error message in response to the select data modification operations; and

one or more statements which, when attempted against the object, cause the one or more actions to be executed  
~~The lock of Claim 12, wherein application of the lock to the object provides for execution of multiple structural modification operations against the object.~~

16. (Cancelled).

17. (Currently amended) A method of reorganizing a table within a database file, the method comprising:

inserting a first marker into a log file containing records of modification operations against an original table, wherein the insertion occurs when data of the original table starts to be copied to a reorganized table;

inserting a second marker into the log file when the data of the original table is finished being copied to the reorganized table;

inserting a third marker into the log file when select data modification operations are blocked from executing against the original table;

collecting the records of the modification operations from the log file occurring after the first marker and up until the third marker; and

applying the modification operations of the collected records to the reorganized file after determining that the second marker has been inserted  
The method of Claim 16, further comprising using a dummy-table other than the original table and the reorganized table to insert at least one of the first, second, and third markers.

18. (Cancelled).

SUB B27 19. (Currently amended) A method of reorganizing an object in a database, the method comprising:

reorganizing an original object by copying data from the original object to a reorganized object; and

applying a trigger lock to the original object, the trigger lock blocking data modification operations from modifying the original object while allowing other operations to access the original object, wherein additional more-restrictive locks to the original object are not needed during the method of reorganizing the original object, thereby providing clients of the original object continuous access to the data during the reorganization through at least the other operations allowed by the trigger lock.

20. (Original) The method of Claim 19, wherein the other operations include one or more read-only operations.

21. (Original) The method of Claim 19, wherein the other operations include one or more structural modification operations.

22. (Original) A method of reorganizing an object in a database file, the method comprising:

reorganizing an original object by copying data from the original object to a reorganized object; and

applying a trigger lock to the reorganized object, the trigger lock blocking data modification operations from modifying the reorganized object, while allowing other operations to access the reorganized object.

23. (Original) The method of Claim 22, wherein the other operations include one or more read-only operations.

24. (Original) The method of Claim 22, wherein the other operations include one or more structural modification operations.

A4 25. (Original) The method of Claim 22, wherein the one or more structural modification operations include consecutive data definition language operations.

26. (Original) A method of reorganizing an object in a database file, the method comprising:

reorganizing an original object by copying data from the original object to a reorganized object;

when the original object included one or more relational constraints, applying at least one of the one or more relational constraints to the reorganized object; and

allowing at least read-only access to the reorganized object while applying the at least one or more relational constraints.

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27. (Cancelled).

28. (Cancelled).

29. (Cancelled).

SUB B37

30. (Currently amended) A reorganization system, comprising:  
at least one database file having a table of data and a log file;  
a database management system communicating with the at least one  
database file, thereby governing the modification of the data in the table; and  
a reorganization application communicating with the database  
management system to access the table and communicating with the database  
file to access the log file, wherein the reorganization application is configured to  
copy the data of the table to a reorganized table, to apply modifications from the  
log file corresponding to modifications to the table during the copying of the data,  
and to substitute the reorganized table for the table, thereby reorganizing the  
data of the table. ~~The reorganization system of Claim 29, wherein the~~  
~~reorganization application is further configured to apply a trigger lock to the table,~~  
~~thereby blocking select data modification language operations while allowing at~~  
~~least read-only operations, wherein additional more-restrictive locks to the table~~  
~~are not needed during reorganization of the table, thereby providing clients of the~~  
~~table continuous access to the data during the reorganization through at least the~~  
~~other operations allowed by the trigger lock.~~

31. (Cancelled).

SUB B47

32. (Currently amended) A reorganization application for reorganizing an  
object in a database, the reorganization application comprising an execution thread  
which reorganizes an original object by copying data of the original object to a  
reorganized object, and which applies a trigger lock to the original object, wherein the  
trigger lock blocks data modification operations from modifying the original object while  
allowing other operations to access the original object, wherein additional more-  
restrictive locks to the original object are not needed during reorganization of the  
original object, thereby providing clients of the original object continuous access to the  
data during the reorganization through at least the other operations allowed by the  
trigger lock.

33. (Original) The reorganization application of Claim 32, wherein the  
other operations include one or more read-only operations.

34. (Original) The reorganization application of Claim 32, wherein the other operations include one or more structural modification operations.

35. (Original) A reorganization application for reorganizing an object in a database, the reorganization application comprising an execution thread which reorganizes an original object by copying data of the original object to a reorganized object, and which applies a trigger lock to the reorganized object, wherein the trigger lock blocks data modification operations from modifying the reorganized object while allowing other operations to access the reorganized object.

36. (Original) The reorganization application of Claim 35, wherein the other operations include one or more read-only operations.

37. (Original) The reorganization application of Claim 35, wherein the other operations include one or more structural modification operations.

38. (Original) The method of Claim 35, wherein the one or more structural modification operations include consecutive data definition language operations.

39. (Original) A reorganization application for reorganizing an object in a database, the reorganization application comprising an execution thread which reorganizes an original object by copying data of the original object to a reorganized object, wherein, when the original object included one or more relational constraints, the execution thread applies at least one of the one or more relational constraints to the reorganized object, and wherein the execution thread allows at least read-only access to the reorganized object while applying the at least one or more relational constraints.

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SUB 657 40. (Currently amended) A reorganization application for reorganizing an object in a database, the reorganization application comprising an execution thread which reorganizes an original object by copying data of the original object to a reorganized object and which substitutes the reorganized object for the original object, wherein the execution thread also allows read-only access to the data during at least a portion of the substitution of the reorganized object for the original object.

41. (Original) The reorganization application of Claim 40, wherein the read-only access to the data includes read-only access during multiple data definition language operations.

42. (Cancelled).

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- 43. (Cancelled).
- 44. (Cancelled).
- 45. (Cancelled).

Please add the following new claims.

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- 46. (New) The lock of Claim 15, wherein the one or more statements include at least one of insert, update, and delete.
  - 47. (New) The lock of Claim 15, wherein the lock is formed from a procedure implemented within a database management system.
  - 48. (New) The method of Claim 17, wherein a first thread of execution controls the insertion of the first, second, and third markers, while a second thread of execution controls the collection of the records of the modification operations and the application of the modification operations to data of the reorganized file.
  - SUB 667 49. (New) The reorganization system of Claim 30, wherein the reorganization application is further configured to apply a trigger lock to the reorganized table, thereby blocking select data modification language operations while allowing one of one or more read-only operations and one or more data definition language operations.
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